



Disclosure RSW8-2000-0093

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## Summary

Status	Submitted
Processing Location	RSW
Functional Area	Hom: SWG Tools (Team)
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Lab	
Technology Code	

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## Inventors without Lotus Notes IDs

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## Main Idea

**Title of disclosure (in English)**

A method of internationalizing Dynamically Rendered HTML through XML tag substitution

**Idea of disclosure**

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

A key problem in building websites that must be deployed in various national languages is that one of the primary technologies used in building web sites, e.g. HTML-based template languages like JavaServer Pages (JSP), are not entirely amenable to standard internationalization techniques because they contain a mixture of static content, dynamic content, and formatting information in a single file.

This technique demonstrates how with the addition of a single template language tag that a template file (like a JSP file) can be divided into sections that can be internationalized (e.g. substituted for corresponding sections in a natural language and character set) and those that must be passed through unchanged. It also covers a technique for efficiently substituting the internationalized sections for the sections in a "master" template file so that the performance of multiple-language sites using this technique is virtually unchanged from sites that use only a single national language.

2. How does the invention solve the problem or achieve an advantage, (a description of "the invention", including figures inline as appropriate)?

The first part of this invention is this: We add a new tag to a JSP file. This tag is a terminated, XML-style tag called the "text" tag. Sections of a JSP that must be translated into a national language are delimited by closing and ending "text" tags. What is enclosed within the opening and closing tags can be a combination of HTML tags (e.g. <BR> for line breaks, <FONT> </FONT> to indicate font changes, etc.) and plain text.

Each "text" tag has as part of it a unique identifier, which is a simple integer. The "Text" tags in a JSP document may be numbered serially, or they may be out of order – however, there are advantages to numbering them serially, as we will see later. As an example, see the following figure:

```
<jsp:usebean id="user" scope="session" class="com.ibm.demo.User"/>
<HTML>
  <HEAD> <TEXT id=1> Internationalization Demo </TEXT> </HEAD>
  <BODY> <TEXT id=2> Welcome, Mr. </TEXT> <%= user.getName()%>
  ...
</BODY>
</HTML>
```

Figure 1: U.S.-English Master Template JSP

This shows a JSP file with the "TEXT" tag added. The second part of this invention is a second file, known as a "substitution" file that includes the text that will be substituted in the output of the JSP. For example, see the following substitution file for German.

```
<TEXT id=1>Internationalisierung Demo </TEXT>
<TEXT id=2> <BOLD> Willkommen, Herr, </BOLD></TEXT>
```

Figure 2: Substitution file for German national language

Here we see that the substitution file contains within its tags the text that will be substituted for the original text. It may contain not only text, as is shown in the first tag, but text plus additional (or different) formatting, as shown in the second tag.

The third part of this invention is a special Java Servlet that runs AFTER the JSP file has produced its output. There are a number of ways in which this might be achieved, the simplest of which is a common technique known as "MIME-type filtering", which allows the output of one servlet (or JSP file) to be chained

to the input of another servlet. This new Java Servlet (the "Parser servlet") will perform the following actions:

- (1) Read the input stream and place HTML output on the output stream to be returned to the user's browser.
- (2) Scan the incoming text for instances of the "TEXT" tag. When a "TEXT" tag is encountered, it will substitute the contents of the "TEXT" tag for the contents of the corresponding "TEXT" tag in the substitution file in the output stream.
- (3) Repeat steps 1-2 until the input stream is empty.

The contents of the "Substitution file" can be held in a simple Array data structure, making lookup of the corresponding "Text" tags extremely efficient.

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?

There are several other potential solutions to this problem. Most of them involve the use of the Java properties facility (e.g. resource bundles) to externalize text for internationalization. The problem is that this is a very heavy-weight solution, and does not adequately address the problem of formatting that this solution includes.

Another potential solution is to simply translate each JSP into each appropriate national language. The problem here is that if any part of the JSP changes, then the translated JSP's must also be updated.

Another solution is to use the JSP "include" facility to separate internationalized from non-internationalized content. The problem with this is that the "include" facility cannot intelligently select the correct substitution file at runtime as our servlet can.

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.

We are examining this invention to see if it can be used in the IBM.com site (the web personalization project).

**\*Critical Questions ( Questions 1 - 7 must be answered)**

**Question 1**

On what date was the invention workable? 05/12/2000. Please format the date as MM/DD/YYYY (Workable means i.e. when you know that your design will solve the problem)

**Question 2**

Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?

☐ Yes  
☒ No

If yes, Enter the name of each publication or patent and the date published below

Publication/Patent:

Date Published or Issued:

Are you aware of any publications, products or patents that relate to this invention?

☐ Yes  
☒ No

If yes, Enter the name of each publication or patent and the date published below

Publication/Patent:

Date Published or Issued:

**Question 3**

Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal?

☐ Yes  
☒ No

Is a sale, use in manufacturing, product announcement, or proposal planned?

☐ Yes  
☒ No

If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made:

Product:

Version/Release:

Code Name:

Date:

To Whom:

If more than one, use cut and paste and append as necessary in the field provided.

#### Question 4

Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers?

☐ Yes

☒ No

If yes, give a date. Please format the date as MM/DD/YYYY.

#### Question 5

Have you ever discussed your invention with others not employed at IBM?

☐ Yes

☒ No

If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer, date discussed, under CDA, and CDA #.

#### Question 6

Was the invention, in any way, started or developed under a government contract or project?

☐ Yes

☐ No

☒ Not sure

If Yes, enter the contract number.

#### Question 7

Was the invention made in the course of any alliance, joint development or other contract activities?

☐ Yes

☐ No

☒ Not Sure

If Yes, enter the following: Name of Alliance, Contractor or Joint Developer:

Contract ID number

Relationship contact name

Relationship contact E-mail

Relationship contact phone

#### Question 8

Have you submitted or are you aware of any related disclosure submission?

☐ Yes

☒ No

If Yes, please provide the title and docket or disclosure number below:

#### Question 9

What type of companies do you expect to compete with inventions of this type? Check all that apply.

☐ Manufacturers of enterprise servers

☐ Manufacturers of entry servers

☐ Manufacturers of workstations

☐ Manufacturers of PC's

☐ Non-computer manufacturers

☐ Developers of operating systems

☒ Developers of networking software

☒ Developers of application software

☒ Integrated solution providers

☒ Service providers

☐ Other (Please specify below)

**Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the evaluation)**

(The Patent Value tool can be used by you or the evaluation team to determine the potential licensing value of your invention.)

These are the answers which were entered into the **Patent Value Tool**.

**Market**

What is the anticipated annual market size (in dollars) that will be captured by your invention?

\$10M to \$100M

Reason(s) for above Answer Internationalization and language translation is a huge market. Every large, international web site must be translated. I am giving a conservative estimate.

**CLAIMS**

**Question 1** - How new is the technical field?

Existing

**Question 2** - How central is the invention to the product(s) which might be expected to contain the invention?

Essential

Reason(s) for above Answer You can base entire translation products on this notion.

**Question 3** - What is the scope of the claim?

Moderate

**PORTFOLIO NEED**

[View PPM Needs List](#)

What are the portfolio needs in the area of your invention?

Listed in PPM Needs

Reason(s) for above Answer Electronic Commerce, B2B and Internet technologies are applicable

**EXPLOITATION & ENFORCEMENT**

**Question 1** - How easily can the use of the invention by a competitor be detected?

Easily

**Question 2** - How easily can the use of the invention be avoided by a competitor?

With much work

Reason(s) for above Answer The entire process for internationalizing dynamically rendered HTML pages is fraught with peril. A competitor would need to do some expensive and time consuming things to internationalize without this invention

**BUSINESS VALUE**

**Question 1** - What percentage of the companies producing products in the field of this invention might use this invention?

Broadly cloned

Reason(s) for above Answer It's an extremely simple technique, but not seen so far in the field.

**Question 2** - What is the value of this patent to current or anticipated Alliance Activity between IBM and other companies?

High value

Reason(s) for above Answer Could be a good way to bridge the gap between content providers XML formatted content and Java Application Server Providers

**Question 3** - What is the value of this patent to current or anticipated Technology Transfer Activity between IBM and other companies?

High value

Reason(s) for above Answer Valuable for IBM in getting concessions from JSP proponents like Sun, BEA, etc.

**Question 4 - Does it result in prestige to IBM?**  
Industry wide

**Post Disclosure Text & Drawings**

Enter any additional information relating to this disclosure below:

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(Form Revised 12/17/97)

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